

**Notice of Allowability**

Application No.

10/023,075

Examiner

Chih-Ching Chow

Applicant(s)

GUSIKHIN ET AL.

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/30/2006.
2. ☒ The allowed claim(s) is/are 1-4, 7-12, 15, 16 and 20-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                   |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>7/17/2006</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                          |
|   | 9. <input type="checkbox"/> Other _____   |

### **Examiner's Amendment and Statement of Reasons for Allowance**

1. This action is responsive to Applicant's amendment after non-final filed May 30, 2006.

#### **Examiner's Amendment**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Thomas E. Donohue, Registration Number 44,660, on July 17, 2006 to put the claims in condition for allowance.

The application has been amended as follows:

1. (Currently Amended) A virtual reality modeling language (VRML) interface computer device for printed circuit board (PCB) manufacturing comprising:

a World Wide Web browser wherein said browser includes a VRML viewer plug-in ;  
at least one external database comprising a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type are created on differing software platforms, said reference designator, said X and Y location rotation information, and package type are partially comprised of Gerber images and partially comprised of CAD images; and

a VRML interface software program installed onto said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type and said VRML viewer plug-in and creates a ~~second~~ neutral image file based on said reference designator, said X and Y location, said

Art Unit: 2191

rotation information, and said package type, wherein said ~~second~~ neutral image file can be viewed independent of computer platform .

2. (Original) The device as recited in claim 1 further comprising a database interface to communicate between said browser and said at least one external database.

3. (Original) The device as recited in claim 2 wherein said database interface is a common gateway interface (CGI).

4. (Previously Amended) The device as recited in claim 2 wherein said database interface is an applets routine.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The device as recited in claim 1 wherein said ~~second~~ neutral image files comprise ~~are composed in~~ a JPEG format that can be viewed independent of computer platform.

8. (Currently Amended) The device as recited in claim 1 wherein said ~~second~~ neutral image files comprise ~~are composed in~~ a GIF format that can be viewed independent of computer platform.

9. (Previously Presented) A virtual reality modeling language (VRML) interface system for printed circuit board (PCB) manufacturing comprising :

a World Wide Web browser wherein said browser includes a VRML viewer plug-in;

Art Unit: 2191

at least one external database storing a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components are created on differing software platforms, said reference designator, said X and Y location, rotation information, and package type are partially comprised of Gerber images of PCB artwork and are partially comprised of CAD images of electronic components used in assembling said PCB;

a VRML interface software program installed onto said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a ~~second~~ neutral image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components wherein said ~~second~~ neutral image file can be viewed independent of computer platform ; and

a printed circuit board (PCB) assembly facility wherein assembly operators assemble PCBs from said ~~second~~ neutral image file.

10. (Original) The system as recited in claim 9 further comprising a database interface to communicate between said browser and said at least one external database.

11. (Original) The system as recited in claim 10 wherein said database interface is a common gateway interface (CGI).

12. (Currently Amended) The system as recited in claim 10 wherein said database interface is an applets routine.

13. (Cancelled)

14. (Cancelled)

15. (Previously Presented) The system as recited in claim 9 wherein said reference designator, said X and Y location, rotation information, and package type are partially comprised of a VRML database.

16. (Original) The system as recited in claim 15 wherein said VRML database is partially comprised of fiducials.

17.-19. (Cancelled)

20. (Original) The system as recited in claim 15 wherein said VRML database is partially comprised of package type information for components to be assembled on said PCB.

21. (Currently Amended) The system as recited in claim 9 wherein said ~~second~~ neutral image files are composed in a JPEG format that can be viewed independent of computer platform.

22. (Currently Amended) The system as recited in claim 9 wherein said ~~second~~ neutral image files are composed in a GIF format that can be viewed independent of computer platform.

23. (Currently Amended) A method for printed circuit board (PCB) manufacturing to generate including generating a neutral ~~second~~ VRML image file based on a reference designator, an X and Y location, rotation information, and package type for each of a

Art Unit: 2191

plurality of components created from differing software platforms comprising the steps of:

assembling at least one external database that contains said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components created from differing software platforms, said reference designator, said X and Y location rotation information and package type are partially comprised of Gerber images of PCB artwork and are partially comprised of CAD images of electronic components used in assembling said PCB;

loading a VRML interface software program onto a World Wide Web (WWW) browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a neutral ~~second VRML~~ image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components wherein said neutral ~~second VRML~~ image file can be viewed independent of computer platform ;

accessing a WWW server by using said WWW browser and using a database interface to access said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components; and

downloading said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and using said VRML interface software program to generate said neutral ~~second~~ image file.

24. (Currently Amended) The method as recited in claim 23 further comprising the step of viewing said neutral ~~second~~ image file by utilizing said WWW browser wherein a VRML viewer plug-in is loaded onto said browser.

-- End --

**Examiner's Statement of Reason(s) for Allowance**

3. Claims 1-4, 7-12, 15-16, 20-24 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The prior arts of record: **Van Huben et al.**, teaches design control system suitable for use in connection with the design of integrated circuits and other elements of manufacture having many parts which need to be developed in a concurrent engineering environment with inputs provided by users and or systems which may be located anywhere in the world provides a set of control information for coordinating movement of the design information through development and to release while providing dynamic tracking of the status of elements of the bills of materials in an integrated and coordinated activity control system utilizing a repository which can be implemented in the form of a database (relational, object oriented, etc.) or using a flat file system. **Zizzo**, teaches a multi-faceted circuit design platform facilitates the design of circuits and chips by making it easier for designers to locate and incorporate available virtual component blocks into new designs. **Engeldrum et al.**, teaches a technique for modeling the tone reproduction curve of a flat panel screen such as an LCD. The technique employs a second order function to predict the luminance output as a function of the input voltage based upon two known input values. **Powers et al.**, teaches a computer-based system for designing and using three-dimensional environments over a bandwidth limited network such as the Internet. The system allows an environment to be specified as a series of two-dimensional grids of text characters. Each character occupies a single grid position and represents an object in the environment. **Fujiwara et al.**, teaches a component/board retriever 2 retrieves component/board data from CAD data supplied to a CAD data input unit 1. A circuit board information storage 3 stores various board information and outputs board information based on board design data. New art made of record: **Nolte et al.**, US 2003/0098881 A1, teaches a graphical user interface for displaying and

interacting with a rendered image of a graphical object on a display device. A color value is stored for each pixel in the display device. However, none of them, taken alone or in combination, teaches a virtual reality modeling language (VRML) interface system for printed circuit board (PCB) manufacturing, comprising: a World Wide Web browser wherein said browser includes a VRML viewer plug-in; at least one external database comprising a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type are created on differing software platforms, said reference designator, said X and Y location rotation information, and package type are partially comprised of Gerber images and partially comprised of CAD images; and a VRML interface software program installed onto said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type and said VRML viewer plug-in and creates a neutral image file based on said reference designator, said X and Y location, said rotation information, and said package type, wherein said neutral image file can be viewed independent of computer platform in such a manner as recited in claims 1, 9, and 23.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2191

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow  
Examiner  
Art Unit 2191  
July 21, 2006

CC



WEI ZHEN  
SUPERVISORY PATENT EXAMINER